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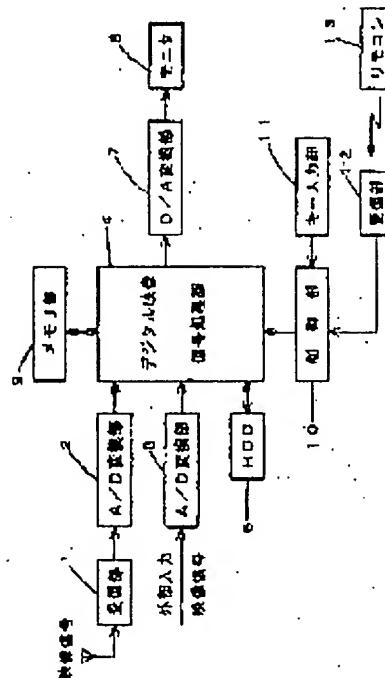
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## (54) VIDEO RECORDING AND REPRODUCING DEVICE

### (57) Abstract:

**PROBLEM TO BE SOLVED:** To provide a video recording and reproducing device that can automatically store/erase video data by placing priority on video data having been recorded.

**SOLUTION:** A control section 10 places a 1st priority ranking to video data set unable to be deleted by a user, a 2nd priority ranking to video data not reproduced after recording, and a 3rd priority ranking to video data having been reproduced after recording. In the case that no idle area exists in a hard disk HDD 5 in a video recording mode, recording of video data is continued in a form of overwriting the data to a video recording area of the video data with the 3rd priority ranking. When the new data are recorded fully on the recording area of the video data with the 3rd priority ranking, a monitor 8 displays a confirmation menu to allow a user to confirm whether or not the new data can be recorded on the video recording area for the video data with the 2nd priority ranking, when the user confirms the confirmation-menu to make an operation of admitting the overwrite, the recording of the video data is continued in a form of overwriting the new data on the video recording area of the video data with the 2nd priority ranking succeedingly.



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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]****[0001]**

[Field of the Invention] This invention relates to the image transcription regenerative apparatus which displays on a screen the image data recorded on videotape, and is reproduced while recording various image data on videotape as a file to the hard disk which is a rec/play mold disk.

**[0002]**

[Description of the Prior Art] Recently, instead of the conventional video tape, the image transcription regenerative apparatus using a hard disk is offered as a record medium which records digital-broadcasting signals, such as CS broadcasting and BS broadcast.

[0003] If image data like digital broadcasting are recorded on videotape to such a hard disk, the limitation of capacity will surely be arrived at. Unlike a video tape or disk media, a hard disk is installed in equipment, and can usually be easily exchanged no longer by the user (user). Consequently, after it, since the amount of data (capacity) which can be recorded on videotape to the hard disk installed in equipment was decided, when it reached the limitation of capacity, it was not able to perform a new image transcription until the user chose image data [ finishing / an image transcription ] himself and set them up possible [ an image transcription ].

[0004] Moreover, in order to cancel such fault, in the conventional image transcription record regenerative apparatus, some which are performed in the form which carries out sequential overwrite are in the image data with which the image transcription was recorded on videotape before it after arriving at the limitation of capacity. However, in this case, since it was overwritten in the condition without regards to a user's intention, even image data not to eliminate had the fault of being eliminated by the kitchen.

[0005] As what cancels such fault, to JP,10-283764,A In the part of an image transcription video tape listened [ view and ] attaching and displaying the existing viewing and listening mark on the graph currently displayed on the monitor and overwriting the part listened [ view and ] A previous graph is changed from the location to the display of the part non-listened [ view and ], and the image transcription regenerative apparatus equipped with the function on which future parts are displayed as a field which can be recorded on videotape is indicated (this is called conventional technique 1). Moreover, when recording a program etc., to JP,10-261285,A, the tape residue to chart lasting time can be checked, and the record regenerative apparatus devised so that a program to save might not be eliminated accidentally is indicated (this is called conventional technique 2).

**[0006]**

[Problem(s) to be Solved by the Invention] However, in the thing of the above-mentioned conventional technique 1, in order that the user itself might look at the displayed graph and might change the part listened [ view and ] to the display of the part non-listened [ view and ], when the field which can be recorded on videotape had been lost during an image transcription, there was a problem that it could not respond immediately. Moreover, since there was no user on that occasion when recording on videotape by image transcription reservation, there was also a problem that the image transcription of image data

will be interrupted completely on the way.

[0007] Moreover, in the thing of the above-mentioned conventional technique 2, it can set up so that a program to save may not be eliminated accidentally, but when eliminating overwriting other programs, nothing is indicated about in an order from which program it eliminates. Therefore, although recorded on videotape, for example, the program which has become with viewing and un-listening by convenience also had the problem that it may be eliminated by the contingency.

[0008] It was originated that this invention should solve this trouble, and the purpose is in offering the image image transcription regenerative apparatus which can perform preservation and elimination automatically by attaching priority to image data [ finishing / an image transcription ].

[0009]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, the image image transcription regenerative apparatus of this invention While recording various image data on videotape as a file on a rec/play mold disk In the image image transcription regenerative apparatus which displays on a screen the image data recorded on videotape, and is reproduced At the time of a setting means to set image data [ finishing / priority 2 and the playback after an image transcription of priority 1 and the image data which are not reproduced after an image transcription / data / which were set up by the user improper / elimination / among the image data currently recorded by said rec/play mold disk on videotape / image ] as priority 3, and image transcription mode When the free area of said rec/play mold disk is lost While continuing the image transcription of image data in the form which overwrites the field to which the image data of priority 3 are recorded on videotape when [ all / that were judged that a current image transcription is not completed even if it carries out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape before [ all / that carry out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape The check screen which checks whether the field to which the image data of priority 2 are recorded on videotape may be overwritten is displayed. When a user performs actuation which checks this check screen and confirms overwrite after [ all / that carried out the until / field full / image transcription ] the image data of priority 3 are recorded on videotape It has the control means which continues the image transcription of image data in the form which overwrites the field to which the image data of priority 2 are recorded on videotape continuously. Said control means When overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape, it is characterized by performing an overwrite image transcription in the old order of image transcription time.

[0010] According to this invention which has such a description, a setting means sets image data [ finishing / priority 2 and the playback after an image transcription of priority 1 and the image data which are not reproduced after an image transcription / data / which were set up by the user improper / elimination / among the image data currently recorded by the rec/play mold disk on videotape / image ] as priority 3. That is, about priority 2 and priority 3, although a user needs to set up himself about priority 1, even if a user does not set up one by one, it sets up automatically with a setting means. Even if this does not perform especially actuation in which a user secures an image transcription field, it becomes possible to continue recording new image data on videotape in the form which overwrites the rec/play mold disk which has a limit in data volume from the lower one of priority.

[0011] Moreover, a control means continues the image transcription of image data in the form which overwrites the field to which the image data of the priority 3 determined beforehand are recorded on videotape, when the free area of a rec/play mold disk is lost at the time of image transcription mode, and when [ all / that were judged that a current image transcription is not completed even if it carries out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape, before [ all / that carry out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape, the check screen which checks whether the field to which the image data of priority 2 are recorded on videotape may be overwritten is displayed on a monitor. when a user performs acuation which checks this check screen and confirms overwrite, after [ all / that carried out the until / field full / image transcription ] the image data of priority 3 are recorded on videotape, the image transcription of

image data is continued in the form which overwrites the field to which the image data of priority 2 are recorded on videotape continuously. Thereby, it can record on videotape on a rec/play mold disk, without breaking off the image data under present image transcription. Moreover, even if it does not perform especially actuation in which a user secures an image transcription field, it becomes possible to continue recording new image data on videotape on the rec/play mold disk which has a limit in data volume.

[0012] Moreover, a control means performs an overwrite image transcription in the old order of image transcription time, when overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape. Usually, when eliminating image data [ finishing / an image transcription of a user ], eliminating from an old thing is common and it performs an overwrite image transcription sequentially from the old thing of image transcription time with this equipment according to general recognition of such a user. When this records new image data on videotape on the lost rec/play mold disk, it can record on videotape, eliminating sequentially from old image data.

[0013] Moreover, while the image image transcription regenerative apparatus of this invention records various image data on videotape as a file on a rec/play mold disk In the image image transcription regenerative apparatus which displays on a screen the image data recorded on videotape, and is reproduced When the free area of said rec/play mold disk is lost at the time of a setting means to set up the priority of the image data currently recorded by said rec/play mold disk on videotape, and image transcription mode It is characterized by having the control means which continues the image transcription of image data in the form which overwrites the field to which the low image data of priority are recorded on videotape. According to this invention which has such a description, a control means continues the image transcription of image data according to the priority set up beforehand in the form which overwrites the field to which the low image data of priority are recorded on videotape, when the free area of a rec/play mold disk is lost at the time of image transcription mode. Thereby, it can record on videotape on a rec/play mold disk, without breaking off the image data under present image transcription. Moreover, even if it does not perform especially actuation in which a user secures an image transcription field, it becomes possible to continue recording new image data on videotape on the rec/play mold disk which has a limit in data volume.

[0014] According to the image image transcription regenerative apparatus of this invention, moreover, said setting means Image data [ finishing / priority 2 and the playback after an image transcription of priority 1 and the image data which are not reproduced after an image transcription / data / which were set up by the user improper / elimination / image ] are set as priority 3. Said control means When the free area of said rec/play mold disk is lost at the time of image transcription mode, it is characterized by continuing the image transcription of image data in the form which overwrites the field to which the image data of priority 3 are recorded on videotape.

[0015] When the free area of a rec/play mold disk is lost according to this invention which has such a description, a control means is the form which overwrites the image transcription field of the image data which reproduce after an image transcription and a user finished looking at, and will continue the image transcription of the image data under current image transcription. That is, although recorded on videotape, since the non-reproduced image data which the user has not seen yet are not eliminated, a user can record on videotape in comfort, even when recording new image data on videotape on a rec/play mold disk with few free areas.

[0016] According to the image image transcription regenerative apparatus of this invention, moreover, said control means when [ all / that were judged that a current image transcription is not completed even if it carries out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape before [ all / that carry out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape The check screen which checks whether the field to which the image data of priority 2 are recorded on videotape may be overwritten is displayed. When a user performs actuation which checks this check screen and confirms overwrite after [ all / that carried out the until / field full / image transcription ] the image data of priority 3 are recorded on videotape, it is characterized by

continuing the image transcription of image data in the form which overwrites the field to which the image data of priority 2 are recorded on videotape continuously.

[0017] when the until [ image transcription field full ] image transcription of the image data [ finishing / the playback after an image transcription ] is carried out at the time of image transcription mode according to this invention which has such a description Although recorded on videotape, since the check screen of whether to continue and eliminate the non-reproduced image data which the user has not seen yet is displayed, a user can judge whether this check screen is seen and the image data which are not reproduced after an image transcription are eliminated by their intention. Thereby, the image data which are not reproduced after an image transcription can prevent generating of the fault that overwrite elimination will be carried out freely, irrespective of a user's intention.

[0018] Moreover, according to the image image transcription regenerative apparatus of this invention, said control means is characterized by performing an overwrite image transcription in order of the image data which the user set up beforehand, when overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape. Since a user performs an overwrite image transcription in the sequence set up beforehand when overwriting the field to which two or more image data of priority 3 are recorded on videotape according to this invention which has such a description, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape, generating of the fault of being overwritten against a user's intention can be prevented.

[0019] Moreover, according to the image image transcription regenerative apparatus of this invention, said control means is characterized by performing an overwrite image transcription in the old order of image transcription time, when overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape.

[0020] When usually eliminating image data [ finishing / an image transcription of a user ] according to this invention which has such a description, eliminating from an old thing is common. With this equipment, the overwrite image transcription according to general recognition of such a user can be performed.

[0021] Moreover, according to the image image transcription regenerative apparatus of this invention, said control means is characterized by performing an overwrite image transcription in an order from the long thing of image transcription time amount, when overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape. According to this invention which has such a description, when eliminating old image data, the image data under present image transcription can be successively recorded on videotape by elimination of the fewest possible image data of a number.

[0022] Moreover, it is characterized by to perform an overwrite image transcription to the field to which the image data which according to the image image transcription regenerative apparatus of this invention said control means is the image transcription time amount nearest to the residual time of the image data under current image transcription when overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape, and have time amount longer than residual time are recorded on videotape. According to this invention which has such a description, when recording the image data under present image transcription on videotape by overwrite successively, the image data under present image transcription can be recorded on videotape to the last by elimination of necessary minimum image data.

[0023] According to the image image transcription regenerative apparatus of this invention, moreover, said control means When playback of the image data currently recorded by said rec/play mold disk on videotape is ended When the check screen which checks whether that image data is set as priority 1 is displayed, a user checks this check screen and setting actuation of priority 1 is performed, it is characterized by determining that image data as priority 1 with said decision means. According to this invention which has such a description, a user can ensure actuation of leaving image data (he wanting to

eliminate and there being nothing) leaving certainly after checking the contents of image data. Thereby, incorrect elimination of image data to leave can be prevented certainly.

[0024]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained with reference to a drawing. Drawing 1 is the block diagram showing the gestalt of operation of the image transcription regenerative apparatus of this invention. This image transcription regenerative apparatus A video signal The television tuner to receive The analog video signal received in the receive section 1 which built, and the receive section 1 While carrying out compression processing of the digital video signal (image data) changed in the A/D-conversion section 2 changed into a digital video signal, the A/D-conversion section 3 which changes into a digital video signal the analog video signal inputted from the outside, and these A/D-conversion sections 2 and 3 by the MPEG method By the hard disk drive (HDD) 5 and the digital video-signal processing section 4 which record the image data by which compression processing was carried out in the digital video-signal processing section 4 and the digital video-signal processing section 4 which restore the image data by which compression processing was carried out to the original image data (image transcription) It is read from HDD5 (reproduced). By the D/A transducer 7 and the D/A transducer 7 which change into an analog signal the image data restored to the original image data from a digital signal It considers as the monitor 8 which carries out a screen display of the image data changed into the analog signal, and the buffer which once stores image data at the time of compression processing and elongation processing. It is constituted by the \*\* memory section (D-RAM) 9, the control section 10 which controls actuation of the whole equipment, the key input section 11 which inputs various key stroke signals into a control section 10, the key receive section 12 which receives various key stroke signals, and the remote control 13 which performs various key (carbon button) actuation.

[0025] In the above-mentioned configuration, file management of each image data currently recorded by HDD5 on videotape is carried out according to the individual, and the image transcription information on the image data (for example, each information, such as existence of a receiving channel, image transcription time, image transcription start time, image transcription end time, image transcription mode, elimination prevention, and playback and priority) is recorded on the head part of each image file. Here, with this operation gestalt, the existence of elimination prevention and playback and the information on priority have newly added composition. These images file information is recorded on the TOC (Table of Contents) field established in the most-inner-circumference part of the hard disk which is not illustrated.

[0026] A control section 10 sets image data [ finishing / priority 2 and the playback after an image transcription of priority 1 and the image data which are not reproduced after an image transcription / data / which were set up by the user improper / elimination / image ] as priority 3, and has the function which records such information on the head part of the image file of each image data currently recorded on videotape at HDD5. The status flag which shows the existence of elimination prevention specifically makes priority 1 the image file set as "1" which shows an elimination failure, the image file to which the status flag which shows reproductive existence is set as "1" which shows un-reproducing is made into priority 2, and the image file to which the status flag shown in reproductive existence is set as "0" is carried out as priority 3. [ show / a playback settled ] Furthermore, let the image file which manages a free area be priority 4. In this case, priority 1 has the highest priority and priority 4 is the lowest.

[0027] moreover, when the free area of HDD5 is lost at the time of image transcription mode, a control section 10 While continuing the image transcription of image data in the form which overwrites the field to which the image data of priority 3 are recorded on videotape when [ all / that were judged that a current image transcription is not completed even if it carries out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape before [ all / that carry out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape The check screen which checks whether the field to which the image data of priority 2 are recorded on videotape may be overwritten is displayed on a monitor 8. When a user performs actuation which checks this check screen and confirms overwrite after [ all / that carried out the until / field full / image transcription ] the image

data of priority 3 are recorded on videotape, it has the function which continues the image transcription of image data in the form which overwrites the field to which the image data of priority 2 are recorded on videotape continuously.

[0028] Furthermore, when a control section 10 is overwritten to the field to which two or more image data of priority 3 are recorded on videotape, And the function to perform an overwrite image transcription in order of the image data which the user set up beforehand when overwriting the field to which two or more image data of priority 2 are recorded on videotape, Or the function to perform an overwrite image transcription in the old order of image transcription time, Or it has either of the functions which performs an overwrite image transcription to the field to which the image data which are the image transcription time amount nearest to the residual time of the image data under the function to perform an overwrite image transcription in an order from the long thing of image transcription time amount, or current image transcription, and have time amount longer than residual time are recorded on videotape.

[0029] A control section 10 displays the check screen which checks whether that image data is set as priority 1 when playback of the image data currently recorded by HDD5 on videotape is ended on a monitor 8, and when a user checks this check screen and performs setting actuation of priority 1, it sets that image data as priority 1 further again. That is, with this operation gestalt, both the setting means of a publication and the control means are realized by a control section 10 and HDD5 at the claim.

[0030] Next, in the image image transcription regenerative apparatus of the above-mentioned configuration, the actuation at the time of an image transcription is mainly explained. However, since the image transcription actuation itself recorded on videotape to HDD5 by using a video signal as image data and the playback actuation itself which reproduces the image data recorded by HDD5 on videotape as a video signal, and is displayed on a monitor 8 are completely the same as that of the conventional image image transcription regenerative apparatus, detailed explanation of the image transcription actuation itself and the playback actuation [ itself ] is omitted here.

[0031] First, it explains how the various image data currently recorded by HDD5 on videotape are assigned and managed from priority 1 to priority 4. When the image data of arbitration are recorded on videotape to HDD5, a control section 10 controls HDD5 and writes the information that it does not reproduce in the head part of the image file which has managed the image data. That is, the status flag which shows a playback settled or un-reproducing is set to "1" which has not been reproduced. Thereby, this image data serves as priority 2.

[0032] Moreover, if playback directions (the playback key which is not illustrated is operated) of the image data of arbitration [ finishing / an image transcription ] are transmitted from remote control 13, a control section 10 While controlling HDD5 and the digital video-signal processing section 4 based on this indication signal, reproducing the corresponding image data which are recorded by HDD5 on videotape, performing elongation processing and making it display on a monitor 8 The status flag "1" which shows un-reproducing [ which is written in the head part of the management file which has managed the image data ] is rewritten to "0" which shows a playback settled. Thereby, this image data serves as priority 3.

[0033] Moreover, a control section 10 displays the check screen 30 shown in drawing 2 after playback of image data [ finishing / an image transcription ] etc. on a monitor 8. It is the screen where the user itself sets up whether this check screen 30 is set up improper [ elimination of the image data currently recorded by HDD5 on videotape ], and the display window 31 which displays the image file name of the various image data currently recorded by HDD5 on videotape, and the tic aperture 32 for setting up an elimination failure are displayed. A user operates remote control 13 and sets it as the check aperture 32 beside an image file name to set up improper [ elimination ] improper [ elimination of the image data of the image file name ] by what a check is put in for (the check is contained in the top tic aperture in drawing 2 ). That is, a control section 10 rewrites the status flag which shows the existence of the elimination prevention currently written in the head part of the image file which has managed the image data to "1" which shows an elimination failure from "0." Thereby, this image data serves as priority 1.

[0034] In addition, also by operating the check screen-display key which was prepared in remote control

13 and which is not illustrated, this check screen 30 can be displayed on a monitor 8, and can be set up by a user's intention at any time. Moreover, the image data of the image file name can be lowered to priority 2 or priority 3 (however, as for priority, the image data differ by the playback settled or un-reproducing) from priority 1 by removing the check put into the check aperture 32 of the check screen 30.

[0035] Moreover, the control section 10 has managed the free area of HDD5 by one management file, and sets this free area as priority 4. Thus, a control section 10 assigns each image data and the free area which were recorded by HDD5 on videotape to either priority 1 - the priority 4, and manages them.

[0036] Next, in the image transcription regenerative apparatus of such a configuration, the actuation at the time of an image transcription is explained with reference to the flow chart shown in drawing 3. At the time of image transcription actuation, a control section 10 controls HDD5 and detects the residue of a free area (step S1). And when a free area is in HDD5, image data are recorded on videotape to the free area (step S3). (when judged as Yes at step S2)

[0037] When the free area of HDD5 is lost in the middle of this image transcription, (when judged as Yes by step S4) It judges whether a control section 10 has the field (image transcription field) where the image data of priority 3 are recorded on videotape (step S5). When there is an image transcription field of the image data of priority 3, the image transcription of image data is continued in the form which overwrites the image transcription field (step S6). (when judged as Yes at step S5)

[0038] Thus, a control section 10 continues the image transcription of image data in the form which overwrites the image transcription field of the image data of the priority 3, as long as there is an image transcription field of the image data of priority 3 (as long as it is judged as Yes at step S5 and judged as No at step S7), and when it is judged that the field which is carrying out current overwrite is an image transcription field of the image data of the last of priority 3, (when judged as Yes at step S7) next, when it judges whether there is any image transcription field of the image data of priority 2 (step S8) and there is an image transcription field of the image data of priority 2, (when judged as Yes at step S8) before the image data of the last of priority 3 carry out a until [ image transcription field full ] image transcription, the check screen (illustration abbreviation) which checks whether the image transcription field of the image data of priority 2 may be overwritten is displayed on a monitor 8 (step S9).

[0039] When actuation which a user checks this check screen and confirms overwrite is performed For example, (when the decision key which remote control 13 does not illustrate is operated), (when judged as Yes at step S10) a control section 10 after it controls HDD5 and the image data of the last of priority 3 carry out a until [ image transcription field full ] image transcription, the image transcription of image data is continued in the form which overwrites the image transcription field of the image data of priority 2 continuously (step S11, step S12).

[0040] a control section 10 -- thus, the image transcription field of one image data of priority 2, if it records on videotape to the last mostly (if judged as Yes at step S12) Return to step S8 again and it judges whether there is any other image transcription field of the image data of priority 2. When there is another image transcription field of the image data of priority 2, (when judged as Yes at step S8) before the image data by which the current overwrite image transcription is carried out carry out a until [ image transcription field full ] image transcription, the check screen which checks whether the image transcription field of another image data of priority 2 may be overwritten is displayed on a monitor 8 (step S9).

[0041] and a user checks this check screen, and after the image data by which the current overwrite image transcription is carried out carry out a until [ image transcription field full ] image transcription when actuation which confirms overwrite is performed (when judged as Yes at step S10), the image transcription of image data continues in the form which overwrites the image transcription field of another image data of priority 2 continuously (step S11, step S12).

[0042] At a control section 10, in the process in which such a step S1 - step S12 are processed, when image transcription actuation is completed, image transcription actuation is ended at the time. Moreover, when actuation in which a user confirms overwrite in step S10 is not performed, even if it is in the middle of an image transcription, image transcription actuation is ended at the time.

[0043] Although the above is actuation at the time of the image transcription of the image image transcription regenerative apparatus of this operation gestalt With the above-mentioned operation gestalt, when there are two or more image data of priority 3 and image data of priority 2, it sets to step S7. continuing the image transcription of image data in the form which overwrites the image transcription field of the image data of priority 3 throat -- moreover, in step S11, it is not explaining continuing the image transcription of image data in the form which overwrites the image transcription field of the image data of priority 2 throat. This is realizable by making it overwrite the image data which determine the fixed Ruhr and were automatically chosen from the beginning according to the Ruhr in the control section 10. As the Ruhr in this case, the following Ruhr is possible.

[0044] (Ruhr 1) The image data overwritten according to the sequence which the user set up beforehand are chosen. This sequence is stored in the memory which is built in the control section 10 and which is not illustrated.

[0045] (Ruhr 2) The image data overwritten in an order from the old thing of image transcription time are chosen. Image transcription time is stored in the head part of each image file, and is recorded on the TOC field of a hard disk.

[0046] (Ruhr 3) The image data overwritten in an order from the long thing of image transcription time amount are chosen. Image transcription time amount is also stored in the head part of each image file, and it is recorded on the TOC field of a hard disk.

[0047] (Ruhr 4) The image data which are the image transcription time amount nearest to the residual time of the image data under current image transcription, and have time amount longer than residual time are chosen. If this Ruhr is the effective Ruhr and is image transcription reservation, when image transcription reservation is performed, since the time amount which an image transcription takes understands it fundamentally, the residual time of the image data under present image transcription can be calculated from that time amount. And most near and the image data of image transcription time amount longer than residual time can be chosen as residual time as image data to overwrite by comparing this calculated residual time with the image transcription time amount of each image file currently recorded on the TOC field of a hard disk.

[0048] Here, since a user performs an overwrite image transcription in the sequence set up beforehand when the Ruhr 1 is adopted, generating of the fault of being overwritten against a user's intention can be prevented.

[0049] Moreover, when the Ruhr 2 is adopted and image data [ finishing / an image transcription of a user ] are usually eliminated, eliminating from an old thing is common and it can perform the overwrite image transcription according to general recognition of such a user.

[0050] Moreover, when the Ruhr 3 is adopted, the image data under present image transcription can be successingly recorded on videotape by elimination of the fewest possible image data of a number. Moreover, when the Ruhr 4 is adopted and it records the image data under present image transcription on videotape by overwrite successingly, the image data under present image transcription can be recorded on videotape to the last by elimination of necessary minimum image data. Moreover, it will lead also to the efficient activity of the image transcription field of a hard disk.

[0051]

[Effect of the Invention] According to the image image transcription regenerative apparatus of this invention, a setting means sets image data [ finishing / priority 2 and the playback after an image transcription of priority 1 and the image data which are not reproduced after an image transcription / data / which were set up by the user improper / elimination / among the image data currently recorded by the rec/play mold disk on videotape / image ] as priority 3. That is, about priority 2 and priority 3, even if a user does not set up one by one, it sets up automatically with a setting means. Even if this does not perform especially actuation in which a user secures an image transcription field, recording new image data in the form which overwrites the rec/play mold disk which has a limit in data volume from the lower one of priority can be continued on videotape.

[0052] Moreover, according to the image image transcription regenerative apparatus of this invention, the control means is considered as the configuration which continues the image transcription of image

data in the form which overwrites the field to which the low image data of priority are recorded on videotape according to the priority set up beforehand, when the free area of a rec/play mold disk is lost at the time of image transcription mode. Thereby, it can record on videotape on a rec/play mold disk, without breaking off the image data under present image transcription. Moreover, even if it does not perform especially actuation in which a user secures an image transcription field, recording new image data on videotape on the rec/play mold disk which has a limit in data volume can be continued.

[0053] According to the image image transcription regenerative apparatus of this invention, moreover, a setting means Image data [ finishing / priority 2 and the playback after an image transcription of priority 1 and the image data which are not reproduced after an image transcription / data / which were set up by the user improper / elimination / image ] are set as priority 3. A control means When the free area of a rec/play mold disk is lost at the time of image transcription mode, it is considering as the configuration which continues the image transcription of image data in the form which overwrites the field to which the image data of priority 3 are recorded on videotape. That is, when the free area of a rec/play mold disk is lost, the image transcription of the image data under current image transcription will be continued in the form which overwrites the image transcription field of the image data which reproduce after an image transcription and a user finished looking at. Thereby, although recorded on videotape, since it is not eliminated, a user can record on videotape the non-reproduced image data which the user has not seen yet in comfort, even when recording new image data on videotape on a rec/play mold disk with few free areas.

[0054] moreover, when the until [ image transcription field full ] image transcription of the image data [ finishing / the playback after an image transcription ] is carried out at the time of image transcription mode according to the image image transcription regenerative apparatus of this invention Although recorded on videotape, since the check screen of whether to continue and eliminate the non-reproduced image data which the user has not seen yet is displayed, a user can judge whether this check screen is seen and the image data which are not reproduced after an image transcription are eliminated by their intention. Thereby, the image data which are not reproduced after an image transcription can prevent generating of the fault that overwrite elimination will be carried out freely, irrespective of a user's intention.

[0055] Moreover, when overwriting the field to which two or more image data of priority 3 are recorded on videotape according to the image image transcription regenerative apparatus of this invention, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape, generating of the fault of being overwritten against a user's intention can be prevented by constituting so that an overwrite image transcription may be performed in the sequence which the user set up beforehand.

[0056] Moreover, when overwriting the field to which two or more image data of priority 3 are recorded on videotape according to the image image transcription regenerative apparatus of this invention, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape, it constitutes so that an overwrite image transcription may be performed in the old order of image transcription time. When this usually eliminates image data [ finishing / an image transcription of a user ], eliminating from an old thing is common and it can perform the overwrite image transcription according to general recognition of such a user.

[0057] Moreover, since it constituted so that an overwrite image transcription might be performed in an order from the long thing of image transcription time amount when overwriting the field to which two or more image data of priority 3 are recorded on videotape according to the image image transcription regenerative apparatus of this invention, and when the field to which two or more image data of priority 2 are recorded on videotape was overwritten, the image data under present image transcription can be successingly recorded on videotape by elimination of the fewest possible image data of a number.

[0058] Moreover, when overwriting the field to which two or more image data of priority 3 are recorded on videotape according to the image image transcription regenerative apparatus of this invention, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape, it is considering as the configuration which performs an overwrite image transcription to the field to which

the image data which are the image transcription time amount nearest to the residual time of the image data under current image transcription, and have time amount longer than residual time are recorded on videotape. Thereby, when recording the image data under present image transcription on videotape by overwrite succeedingly, the image data under present image transcription can be recorded on videotape to the last by elimination of necessary minimum image data.

[0059] Moreover, the check screen which checks whether that image data is set as priority 1 when playback of the image data currently recorded by the rec/play mold disk on videotape is ended according to the image image transcription regenerative apparatus of this invention is displayed, and when a user checks this check screen and performs setting actuation of priority 1, it is considering as the configuration which sets that image data as priority 1. Thereby, since a user can ensure actuation of leaving image data (he wanting to eliminate and there being nothing) leaving after checking the contents of image data, he can prevent incorrect elimination of image data to leave certainly.

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[Translation done.]

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- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

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## CLAIMS

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### [Claim(s)]

[Claim 1] While recording various image data on videotape as a file on a rec/play mold disk In the image image transcription regenerative apparatus which displays on a screen the image data recorded on videotape, and is reproduced At the time of a setting means to set image data [ finishing / priority 2 and the playback after an image transcription of priority 1 and the image data which are not reproduced after an image transcription / data / which were set up by the user improper / elimination / among the image data currently recorded by said rec/play mold disk on videotape / image ] as priority 3, and image transcription mode When the free area of said rec/play mold disk is lost While continuing the image transcription of image data in the form which overwrites the field to which the image data of priority 3 are recorded on videotape when [ all / that were judged that a current image transcription is not completed even if it carries out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape before [ all / that carry out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape The check screen which checks whether the field to which the image data of priority 2 are recorded on videotape may be overwritten is displayed. When a user performs actuation which checks this check screen and confirms overwrite after [ all / that carried out the until / field full / image transcription ] the image data of priority 3 are recorded on videotape It has the control means which continues the image transcription of image data in the form which overwrites the field to which the image data of priority 2 are recorded on videotape continuously. Said control means The image image transcription regenerative apparatus characterized by performing an overwrite image transcription in the old order of image transcription time when overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape.

[Claim 2] While recording various image data on videotape as a file on a rec/play mold disk In the image image transcription regenerative apparatus which displays on a screen the image data recorded on videotape, and is reproduced When the free area of said rec/play mold disk is lost at the time of a setting means to set up the priority of the image data currently recorded by said rec/play mold disk on videotape, and image transcription mode The image image transcription regenerative apparatus characterized by having the control means which continues the image transcription of image data in the form which overwrites the field to which the low image data of priority are recorded on videotape.

[Claim 3] Said setting means sets image data [ finishing / priority 2 and the playback after an image transcription of priority 1 and the image data which are not reproduced after an image transcription / data / which were set up by the user improper / elimination / image ] as priority 3. Said control means is an image image transcription regenerative apparatus according to claim 2 characterized by continuing the image transcription of image data in the form which overwrites the field to which the image data of priority 3 are recorded on videotape when the free area of said rec/play mold disk is lost at the time of image transcription mode.

[Claim 4] said control means, when [ all / that were judged that a current image transcription is not completed even if it carries out a until / field full / image transcription ] the image data of priority 3 are

recorded on videotape before [ all / that carry out a until / field full / image transcription ] the image data of priority 3 are recorded on videotape The check screen which checks whether the field to which the image data of priority 2 are recorded on videotape may be overwritten is displayed. When a user performs actuation which checks this check screen and confirms overwrite the image image transcription regenerative apparatus according to claim 3 characterized by continuing the image transcription of image data in the form which overwrites the field to which the image data of priority 2 are recorded on videotape continuously after [ all / that carried out the until / field full / image transcription ] the image data of priority 3 are recorded on videotape.

[Claim 5] Said control means is an image image transcription regenerative apparatus according to claim 3 or 4 characterized by performing an overwrite image transcription in order of the image data which the user set up beforehand when overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape.

[Claim 6] Said control means is an image image transcription regenerative apparatus according to claim 3 characterized by performing an overwrite image transcription in the old order of image transcription time when overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape.

[Claim 7] Said control means is an image image transcription regenerative apparatus according to claim 3 or 4 characterized by performing an overwrite image transcription in an order from the long thing of image transcription time amount when overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape.

[Claim 8] Said control means is the image image transcription regenerative apparatus according to claim 3 or 4 characterized by to perform an overwrite image transcription to the field to which the image data which are the image transcription time amount nearest to the residual time of the image data under current image transcription when overwriting the field to which two or more image data of priority 3 are recorded on videotape, and when overwriting the field to which two or more image data of priority 2 are recorded on videotape, and have time amount longer than residual time are recorded on videotape.

[Claim 9] When playback of the image data currently recorded by said rec/play mold disk on videotape is ended, said control means When the check screen which checks whether that image data is set as priority 1 is displayed, a user checks this check screen and setting actuation of priority 1 is performed The image image transcription regenerative apparatus according to claim 1 to 8 characterized by setting the image data as priority 1 with said setting means.

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[Translation done.]